

Analysis of Educational Needs for Audio Visual Media on Waste Sorting for Residents in Malo Village

Achemat Saefudin, Abdul Haris Setiawan, Fatma Sukmawati

Universitas Sebelas Maret
achemat85@student.uns.ac.id

Article History

accepted 31/7/2023

approved 31/8/2023

published 30/9/2023

Abstract

In sorting waste and differentiating it, of course, requires skill and knowledge, it's just that so far the residents do not have the main information or material sources to understand it. Therefore, this study aims to identify the initial needs of the residents as one of the needs in the effort to develop audio-visual media to make it easier for residents to understand waste sorting. This research is included in the needs analysis research with a descriptive quantitative method, with an instrument to collect data, namely a question-naire. Data analysis techniques were carried out descriptively and percent-ages. The results of this research succeeded in showing that, the residents as a whole need a media as their main source of information in understanding waste segregation material, the type of media is audio-visual media, this is due to the opinion of the residents that the media is not so complex to run, and still tend to be familiar to use among residents. It is hoped that this research can become the basis for the development of an innovative audio-visual media product to make it easier for residents to understand waste sort-ing in their environment

Keywords: audio visual, media, waste sorting, environment

Social, Humanities, and Education Studies (SHEs): Conference Series
<https://jurnal.uns.ac.id/shes>

p-ISSN 2620-9284
e-ISSN 2620-9292



This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

INTRODUCTION

In short, it is known that the environment is everything that is always next to us and is always around us, this environment can include living things that breathe to non-living creatures, here are some examples, namely air, water, and energy (Qureshi et al., 2021). Environmental problems such as those that are happening nowadays, namely that the character of caring for the environment must be formed from an early age, a small example of getting used to the character of caring for the environment from an early age is by disposing of trash in the place provided (Said & Nurhayati, 2020). Caring for the environment is an attitude and action that always tries to prevent damage to the environment around it and always develops efforts to repair the natural damage that occurs (Sukirman & Suciati, 2019).

Garbage is one of the biggest problems in Indonesia and is very easy to find in several neighborhoods around the community (Sukirman & Suciati, 2019). We find a lot of garbage, namely in rivers, roads, public places, even in our homes we can find garbage (Maskun et al., 2022). If waste is disposed of in an inappropriate manner, every day the amount of waste increases and every time it rains heavily, floods will always come to Indonesia [2], (Sukananda & Nugraha, 2020). When it floods, all kinds of garbage will be mixed with the flood water. Handling efforts to reduce waste by means of waste management. This effort aims to reduce waste by converting waste into goods that have economic value (Zaky et al., 2022). Garbage is closely related to environmental health, because from this waste various disease-causing microorganisms (pathogenic bacteria) live, as well as nuisance animals such as insects as disease transmitters. Therefore, waste must be managed properly so that it does not disturb or threaten the health of the environment and the surrounding community as small as possible (Liang et al., 2021). Management and disposal of solid waste is a major challenge worldwide, especially in urban areas and developing countries (Geumala et al., 2018). The higher the population and the level of community activity results in an increase in the amount of waste generation so that good waste management is needed (Sompotan & Sinaga, 2022). This management requires the participation of everyone, there are several aspects of waste management that need attention to reduce and handle waste. One aspect of waste management is the technical aspect of the operational pattern which includes container, collection, transfer, processing, transportation and final disposal (Mustaghfiroh et al., 2020). Malo village is a village located in the capital city of the sub-district, Malo village is one of the villages in the Malo sub-district that has carried out garbage transportation service activities, Malo village produces an average of 3 tons of waste every day from 142 participants in the garbage transportation service. So that there is a buildup of garbage considering the capacity of the TPS in Malo Village is only able to accommodate 10 tons per week. Along with the increase in the number of participants in the waste transportation service, there will be an increase in the volume of waste generated. Waste management is a systematic, comprehensive and continuous activity that includes waste reduction and handling (Danang Aji Kurniawan & Ahmad Zaenal Santoso, 2021). Waste management needs to be carried out in a comprehensive and integrated manner from upstream to downstream so that it provides economic benefits, is healthy for the community and safe for the environment and can change people's behavior (Liang et al., 2021). Garbage is a blessing when people are willing to learn to sort out waste that has a sale value from waste that has no value (Zaky et al., 2022).

These efforts can actually be instilled in individuals through educational programs and outreach programs. In today's modern era, computers are a way that is considered effective in making it easier for users to understand things for individuals (Han & Niu, 2019). To achieve this, the writer needs creativity in making an attractive display so that residents and individuals are interested in understanding and trying it. The term learning media in general is a tool for teaching and learning process (Rachmadtullah et

al., 2018). Advances in knowledge and technology have had a major influence on the field of education.

Media is a tool that can be used to convey messages and information to recipients so that they can stimulate the recipient's mind, stimulate feelings and attention. Media can be used in the learning process on an ongoing basis so that it can be effective and efficient as expected (Heo & Toomey, 2020). Learning media can be concluded that all forms of means of conveying information that are made or used in learning in accordance with learning theory, can convey a learning message (Smaldino et al., 2019). The role of learning media is as a learning aid, the media can provide a real experience in learning because it includes all the senses of the mind (Hasyim et al., n.d.).

As a communication tool, the existence of learning media for delivering information and messages from sources (educators) to recipients (students) will be easier to understand. As a tool for growing new creations, students can be stimulated when participating in a lesson, therefore teachers need to create a new and fun learning atmosphere (Tafonao, 2018). Explanation of learning material is not always monotonous, but using a variety of media will certainly attract students' attention to the learning they see. The benefit of media in the learning process is to facilitate interaction between students and teachers so that learning activities will be more effective and efficient (Ferdianto & Setiyani, 2018)

There are more details about the benefits of learning media, namely the delivery of subject matter can be uniformed, the learning process becomes clearer and more interesting, the learning process becomes more interactive, efficiency in time and effort, improves the quality of learning outcomes, changes roles in a more positive and productive direction, media can make abstract learning material more concrete, media can also overcome the limitations of space and time, media can help overcome the limitations of the human senses (Saputri et al., 2018), (Meidyrianto et al., 2022). With the current advances, namely information and communication technology, the teacher will provide learning material that must be able to keep up with current developments and progress. Teachers must use interesting, effective, and efficient learning media and according to the needs of students. According to some experts, learning media can be described based on sensory perception, namely audio, visual media, and audio-visual media (Khumaedi et al., 2021a), (Harjono et al., 2020).

Currently, basically there are several alternative solutions to provide understanding to residents about waste selection. For example, 1) Campaign and Environmental Education, 2) Social Media and Online Platforms for Information Delivery, 3) Incentive Programs in Each Village, 4) Development of Recycling Infrastructure and Provision of Trash Cans, 5) Collaboration with Local Communities, and 7) In the Recycle Bank program, each of these alternative solutions can be combined or adapted to the needs and characteristics of the local community to achieve a better understanding of waste selection. (Zaky et al., 2022), (Nurdin et al., 2021). As it is known that, one of the solutions is social media and online media, this can be realized in the form of developing a media in the form of audio visual media.. Audio media is a media that uses the sense of hearing as a liaison in conveying content that is on media that only emits sound when used (Nindiyana, 2021). The media includes audio media which include radio, recording, sound, and others. Visual media is media that uses the sense of sight as a link in conveying content in the media which is divided into two-dimensional media and three-dimensional media (Dewi et al., 2020).

A healthy village is one that is free from elements that cause health problems such as liquid waste, solid waste, gas waste, waste that is not processed according to the requirements set by the government, disease-carrying animals, hazardous chemicals, polluted noise, polluted air and contaminated food (Mustaghfiroh et al.,

2020). Therefore, efforts are needed to increase understanding of waste sorting among the public to reduce waste by sorting, reusing and recycling waste.

Based on the findings and some of the analysis above, this study intends to identify the needs and characteristics of audio-visual media needed by residents so that they can easily understand waste sorting in their environment.

METHODS

The research method used in this study is descriptive with a quantitative approach (Sugiyono, 2018). Descriptive research is research conducted to determine the value of an independent variable, either one variable or more without comparison. The quantitative approach is an approach that uses numbers starting from how to collect data, interpreting the data (Maisarah, 2019). The sampling technique is total sampling with a sample of 23 residents in Malo Village, Bojonegoro Regency. The technique in data collection was distributed through a questionnaire which was followed by the instrument used in this study, namely using a questionnaire on the needs of residents in using audio-visual media as their medium for learning. The developed questionnaire contains several questions regarding; 1) the need for waste sorting information and 2) the perception of audio-visual media which adopts several questions from research conducted by (Danang Aji Kurniawan & Ahmad Zaenal Santoso, 2021), (Khumaedi et al., 2021b). The results of the questionnaire data were analyzed descriptively with a percentage (Widoyoko, 2018). This was intended to make it easier to interpret the responses of residents as students (Nana Syaodih Sukmadinata, 2012)

RESULTS AND DISCUSSIONS

As it is known that needs analysis is the initial process of activities to obtain information about problems that exist in the training process or information transfer activities that have been going on so far. Needs analysis is carried out with the aim of identifying problems encountered by students, with the aim of knowing the level of urgency of these problems needs to be developed or not a solution. From the results of the needs analysis questionnaire that was distributed to residents as students, it was identified that in fact one type of media for conveying information, namely audio-visual media was needed by residents so that they could easily understand and understand information about something.

Referring to the results of the needs questionnaire presented in Table 1. it can be seen that the audio-visual media according to the residents is considered capable of attracting their attention to learning. In addition, the audio-visual media will later contain the values of caring for the environment so that residents are also expected to be able to preserve the environment regarding proper waste disposal, besides that, they also hope that in the audio-visual media there will be important information about types of waste, so that they can sort and dispose of waste based on its type. They are aware that there are many benefits of audio-visual media when applied to training or learning, which can help students more easily understand the information. Following are the results of the analysis of the responses distributed to the research subjects.

Table 1. Residents' Responses to the Needed Characteristics of Audio Visual Media

No.	Statement/Questions	Response (%)	
		Yes	No
1.	Do you like information or material in text form?	37%	63%
2.	Can you understand the material or information written down?	42%	48%
3.	Do you like information in graphical or visual form?	86%	14%
4.	Can you understand the information regarding waste segregation that has been conveyed at the time of socialization?	49%	41%
5.	Do you prefer if the information/material is conveyed by audio-	88%	12%

6.	visual media? Do you prefer to study material presented in video or audio-visual formats?	84%	16%
7.	Do you agree with the development of audio-visual media for waste sorting material?	97%	3%
8.	I will find it easier to understand material with a combination of audio and visual formats	92%	8%
9.	I need audio-visual media as a source of information for waste sorting / environmental cleaning materials	82%	18%

From the results of these responses, of course they want audio-visual media to help understand the material, considering that the benefits provided by the media are also quite significant in improving learning outcomes, and the cognitive abilities and attitudes of those who use them (Muhibbin et al., 2021), (Kinder & Kurz, 2018). Characteristics that are increasingly towards complex but still easy to use, make this media quite popular with all ages and levels of education, both formal and non-formal (Khumaedi et al., 2021a), (Sarwinda et al., 2020). Also through this media, information regarding waste sorting will be clearer and easier to understand, because it will contain a visual description of the types and methods of sorting waste. This of course cannot be separated from the rule which states that the process of delivering material will certainly be more effective if the objects and events that become teaching materials can be visualized realistically to resemble the actual situation (Nindiyana, 2021), (Motamedi, 2019)). From the response to the needs analysis questionnaire it is also seen that residents prefer information in audio-visual format, this is a natural thing because audio-visual media has a variety of advantages and more benefits when compared to information delivery media in the form of posters (Sugiyati, 2016). Therefore, this needs analysis activity is one of the right first steps to then be able to create media that is really needed by residents.

It cannot be denied that the benefits provided by this audio-visual media are quite a lot for its users. Therefore, this media is certainly considered suitable for them according to the response given. Because through this type of media, information can be conveyed in more detail and will most likely have implications for the awareness of residents in sorting waste and then disposing of it in an available place.

CONCLUSION

Based on the research conducted, it can be concluded that this research succeeded in answering or being in line with the research objectives, namely identifying needs in the framework of developing audio-visual media for residents to help them understand waste sorting so that they are able to dispose of waste in the space provided. It should be known from various relevant research, that character building and attitudes towards protecting the environment can be initiated through the use of audio-visual media, because it is considered to have a positive impact on the attitude of residents who initially lack respect for the environment, slowly starting to pay attention to environmental cleanliness and environmental hygiene.

Material or information about waste sorting is important to become an object of information in audio-visual media, therefore through this needs analysis research it is hoped that further research can develop audio-visual media to help residents gain an understanding of how waste is sorted so that they are able to have a caring character with the environment.

REFERENCES

Danang Aji Kurniawan, D. A. K., & Ahmad Zaenal Santoso, A. Z. S. (2021). Pengelolaan Sampah di daerah Sepatan Kabupaten Tangerang. *ADI Pengabdian*

- Kepada Masyarakat*, 1(1), 31–36. <https://doi.org/10.34306/adimas.v1i1.247>
- Dewi, N. A., Kartijono, N. E., & Dewi, N. K. (2020). PENGEMBANGAN MEDIA AUDIO-VISUAL PEMBELAJARAN MATERI KEANEKARAGAMAN HAYATI INDONESIA DI SEKOLAH MENENGAH ATAS. *Bioma: Jurnal Ilmiah Biologi*. <https://doi.org/10.26877/bioma.v9i1.6036>
- Ferdianto, F., & Setiyani, S. (2018). Pengembangan Bahan Ajar Media Pembelajaran Berbasis Kearifan Lokal Mahasiswa Pendidikan Matematika. *JNPM (Jurnal Nasional Pendidikan Matematika)*, 2(1), 37. <https://doi.org/10.33603/jnpm.v2i1.781>
- Geumala, M., Nugraha, Agung putri harsa satya, Pratiwi, Y. E., & Ali, M. (2018). Manajemen Lingkungan Kesehatan Perkotaan. *Kesehatan Masyarakat*, 1(3), 107–112.
- Han, M., & Niu, S. (2019). Effect of computer multimedia assisted word annotation on incidental vocabulary acquisition of English reading. *International Journal of Emerging Technologies in Learning*, 14(13), 21–32. <https://doi.org/10.3991/ijet.v14i13.10705>
- Harjono, A., Gunawan, G., Adawiyah, R., & Herayanti, L. (2020). An interactive e-book for physics to improve students' conceptual mastery. *International Journal of Emerging Technologies in Learning*, 15(5), 40–49. <https://doi.org/10.3991/IJET.V15I05.10967>
- Hasyim, F., Surabaya, U. N., Prastowo, T., Jatmiko, B., & Surabaya, U. N. (n.d.). *The Use of Android-Based PhET Simulation as an Effort to Improve Students' Critical Thinking Skills during the Covid-19 Pandemic*. 14(19), 31–41.
- Heo, M., & Toomey, N. (2020). Learning with multimedia: The effects of gender, type of multimedia learning resources, and spatial ability. *Computers & Education*, 146, 103747. <https://doi.org/10.1016/j.compedu.2019.103747>
- Khumaedi, M., Widjanarko, D., Setiadi, R., & Setiyawan, A. (2021a). Evaluating the impact of audio-visual media on learning outcomes of drawing orthographic projections. *International Journal of Education and Practice*, 9(3), 613–624. <https://doi.org/10.18488/journal.61.2021.93.613.624>
- Khumaedi, M., Widjanarko, D., Setiadi, R., & Setiyawan, A. (2021b). EVALUATING THE IMPACT OF AUDIO-VISUAL MEDIA ON LEARNING OUTCOMES OF DRAWING ORTHOGRAPHIC PROJECTIONS. *International Journal of Education and Practice*, 9(3), 613–624. <https://doi.org/10.18488/journal.61.2021.93.613.624>
- Kinder, F. D., & Kurz, J. M. (2018). Gaming Strategies in Nursing Education. *Teaching and Learning in Nursing*, 13(4), 212–214. <https://doi.org/10.1016/j.teln.2018.05.001>
- Liang, Y., Tan, Q., Song, Q., & Li, J. (2021). An analysis of the plastic waste trade and management in Asia. *Waste Management*, 119, 242–253. <https://doi.org/10.1016/j.wasman.2020.09.049>
- Maisarah. (2019). Metode Penelitian Pendidikan Pendekatan Kuantitatif. In *Metode Penelitian Pendidikan Pendekatan Kuantitatif, Kualitatif Dan R&D*.
- Maskun, M., Assidiq, H., Bachril, S. N., & Al Mukarramah, N. H. (2022). TINJAUAN NORMATIF PENERAPAN PRINSIP TANGGUNG JAWAB PRODUSEN DALAM PENGATURAN TATA KELOLA SAMPAH PLASTIK DI INDONESIA. *Bina Hukum Lingkungan*, 6(2), 184–200. <https://doi.org/10.24970/bhl.v6i2.239>
- Meidyrianto, R. K., Hamidah, S., & Efendi, R. (2022). The Analysis of Animated Media and Portfolio PjBL Models to Improve the Competence of Vocational High School Students. *International Journal of Multicultural and Multireligious Understanding*, 9(12), 66. <https://doi.org/10.18415/ijmmu.v9i12.4197>
- Motamedi, V. (2019). The promises of presentational technology for teaching and learning. *Journal of Education and Learning (EduLearn)*, 13(3), 416–419. <https://doi.org/10.11591/edulearn.v13i3.13175>
- Muhibbin, A., Monica, G. T., Patmisari, P., & Muthali'in, A. (2021). Implementasi Media

- Audio Visual untuk Meningkatkan Critical Thinking Siswa Menggunakan Strategi Point Counterpoint. *ASANKA: Journal of Social Science And Education*, 2(2), 233–252. <https://doi.org/10.21154/asanka.v2i2.3181>
- Mustaghfiroh, U., Ni'mah, L. K., Sundusiyah, A., Addahlawi, H. A., & Hidayatullah, A. F. (2020). IMPLEMENTASI PRINSIP GOOD ENVIRONMENTAL GOVERNANCE DALAM PENGELOLAAN SAMPAH DI INDONESIA. *Bina Hukum Lingkungan*, 4(2), 279. <https://doi.org/10.24970/bhl.v4i2.106>
- Nana Syaodih Sukmadinata. (2012). Metode Penelitian Pendidikan. In *Bandung: Alfabeta*.
- Nindiyana, A. (2021). The Use of Audio Media vs . Audio-Visual Media in Teaching Listening. *RETAIN: Research Language Teaching in Indonesia*, 09(2014), 8–12.
- Nurdin, A., Lidiawati, M., & Khairi, N. F. (2021). Pengaruh sampah organik, anorganik dan bahan berbahaya dan beracun (B3) terhadap kesehatan pada pekerja di tempat pemrosesan akhir(TPA) Gampong Jawa Kota Banda Aceh. *Aceh Medika*, 9623(2).
- Qureshi, M. I., Khan, N., Raza, H., Imran, A., & Ismail, F. (2021). Digital Technologies in Education 4.0. Does it Enhance the Effectiveness of Learning? *International Journal of Interactive Mobile Technologies*, 15(4), 31–47. <https://doi.org/10.3991/IJIM.V15I04.20291>
- Rachmadtullah, R., MS, Z., & Syarif Sumantri, M. (2018). Development of computer-based interactive multimedia : study on learning in elementary education. *International Journal of Engineering & Technology*, 7(4), 2035. <https://doi.org/10.14419/ijet.v7i4.16384>
- Said, M. Y., & Nurhayati, Y. (2020). PARADIGMA FILSAFAT ETIKA LINGKUNGAN DALAM MENENTUKAN ARAH POLITIK HUKUM LINGKUNGAN. *Al-Adl: Jurnal Hukum*, 12(1), 39. <https://doi.org/10.31602/al-adl.v12i1.2598>
- Saputri, D. Y., Rukaya, R., & Indri, M. (2018). Need Assessment of Interactive Multimedia Based on Game in Elementary School: A Challenge into Learning in 21st Century. *International Journal of Educational Research Review*, 3(3), 1–8. <https://doi.org/10.24331/ijere.411329>
- Sarwinda, K., Rohaeti, E., & Fatharani, M. (2020). The development of audio-visual media with contextual teaching learning approach to improve learning motivation and critical thinking skills. *Psychology, Evaluation, and Technology in Educational Research*, 2(2), 98. <https://doi.org/10.33292/petier.v2i2.12>
- Smaldino, S. E., Lowthre, D. L., & Mims, C. (2019). *Instructional Technology and Media for Learning* (12th ed.). Pearson.
- Sompotan, D. D., & Sinaga, J. (2022). PENCEGAHAN PENCEMARAN LINGKUNGAN. *SAINTEKES: Jurnal Sains, Teknologi Dan Kesehatan*, 1(1), 6–13. <https://doi.org/10.55681/saintekes.v1i1.2>
- Sugiyati. (2016). *Pengaruh Media Pembelajaran Dan Minat Belajar Terhadap Hasil Belajar Matematika*. 1(3), 227–241. <https://doi.org/10.22236/JPPP>
- Sugiyono. (2018). Metode penelitian kuatintatif , kualitatif dan R & D. In *Bandung: Alfabeta*.
- Sukananda, S., & Nugraha, D. A. (2020). Urgensi Penerapan Analisis Dampak Lingkungan (AMDAL) sebagai Kontrol Dampak terhadap Lingkungan di Indonesia. *Jurnal Penegakan Hukum Dan Keadilan*, 1(2). <https://doi.org/10.18196/jphk.1207>
- Sukirman, A. S., & Suciati. (2019). Penerapan Akuntansi Lingkungan Terhadap Pengelolaan Limbah Bahan Berbahaya Beracun (B3). *Riset Terapan Akuntansi*, 2(3), 89–105.
- Tafonao, T. (2018). Peranan Media Pembelajaran Dalam Meningkatkan Minat Belajar Mahasiswa. *Jurnal Komunikasi Pendidikan*, 2(2), 103. <https://doi.org/10.32585/jkp.v2i2.113>
- Widoyoko, E. P. (2018). Teknik Penyusunan Instrumen Penelitian Pendidikan Kimia.

Yogyakarta: Pustaka Pelajar.

Zaky, A., Saputra, D., & Fauzi, A. S. (2022). Pengolahan Sampah Kertas Menjadi Bahan Baku Industri Kertas Bisa Mengurangi Sampah di Indonesia. *Jurnal Mesin Nusantara*, 5(1), 2775–7390.